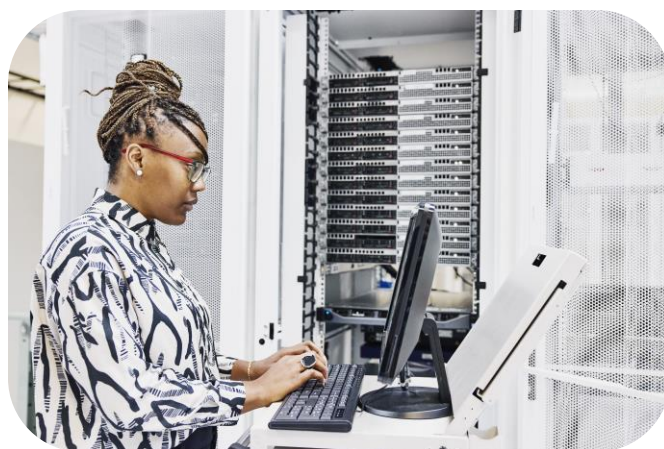


Top use cases for AI-enabled networks

By leveraging the underlying network to support an AI ecosystem, government agencies can unlock the benefits of modernization and begin enhancing public services and operational efficiency today

For years, government agencies have focused on the power of machine learning (ML) to improve operational efficiency. Daily automations handle repetitive tasks such as document evaluation and data entry processing, at increased speed while significantly reducing issues related to human error. A recent Ernst & Young LLP survey found that 51% of government employees use AI applications regularly, and federal AI adoption has more than doubled in the past year.¹

As AI technology improves and its integration into daily operations grows, the government will increasingly rely on AI to enhance cybersecurity, support workforce productivity to meet citizen service demands. Given AI's heavy use of bandwidth and need for scalability, establishing a secure network infrastructure is essential to support AI initiatives that drive innovation and support mission execution.¹



There are several use cases that illustrate the positive outcomes that can accrue when organizations leverage a network designed to support the AI ecosystem, according to Lumen – which is working with federal and state agencies to achieve their digital potential across different sectors. These use cases fall into two basic buckets: private extranet and wide area network (WAN).

Private extranet use cases

Extranet links provide private connectivity between an organization, its agencies, departments and contractors.

A good example of this would be a government healthcare agency implementing a private extranet to connect all hospitals, clinics, and public health departments in a region. When a patient visits a clinic, their medical records are instantly accessible to the physician, who can provide informed care. If the patient needs to be referred to a hospital, the records are seamlessly transferred, supporting continuity of care. In addition, public health officials can monitor health trends in real time, coordinating responses to outbreaks and improving community health outcomes.

When these healthcare agencies leverage AI-enabled networks and private extranets, they can enhance operational efficiency, improve patient care, and support public health initiatives effectively. All of this is possible when the hospital's network service provider runs with a fiber optic capacity and broad network reach to deliver dedicated, secure bandwidth like Lumen.

"Balancing network performance with robust security measures has become a crucial challenge for agencies," says Dave Ward, Chief Technology and Product Officer at Lumen. "Protecting sensitive data while ensuring minimal latency and high availability is not just a priority – it's a necessity. This requires a modern network infrastructure to protect sensitive data and maintain the high performance required for their most critical functions."

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– **Dave Ward**
Chief Technology and Product Officer, Lumen

Extranets can also enable collaboration efforts designed to aggregate and analyze large data sets, sometimes known as community clouds or industry clouds. These types of collaborative efforts, common in the private sector, have historically been hampered in the public sector's past by the lack of secure, high-speed connectivity made available through a robust network infrastructure.

WAN use cases

Many government agencies use WAN to connect data centers, remote offices, and cloud. However, the increasing volume of data traffic on such networks, often generated from increased use of AI applications, drives increased bandwidth and latency requirements. To meet these demands, solutions such as 100-400G access, enterprise fabric services that connect to a private fabric, private data centers, hyperscalers, and specialized clouds (e.g., storage and security clouds) are essential for interconnecting the ecosystem of partners efficiently and securely.

Imagine a government agency implementing an enterprise-scale WAN with virtual private fabric extranets to support a smart city project. The agency connects various data centers, remote offices, and cloud resources to create a unified network. IoT sensors are deployed across the city to monitor traffic, air quality, and energy usage. Data from these sensors is collected and analyzed in real-time, allowing the agency to optimize traffic flow, reduce pollution, and improve energy efficiency. The community and its citizens are positively affected.

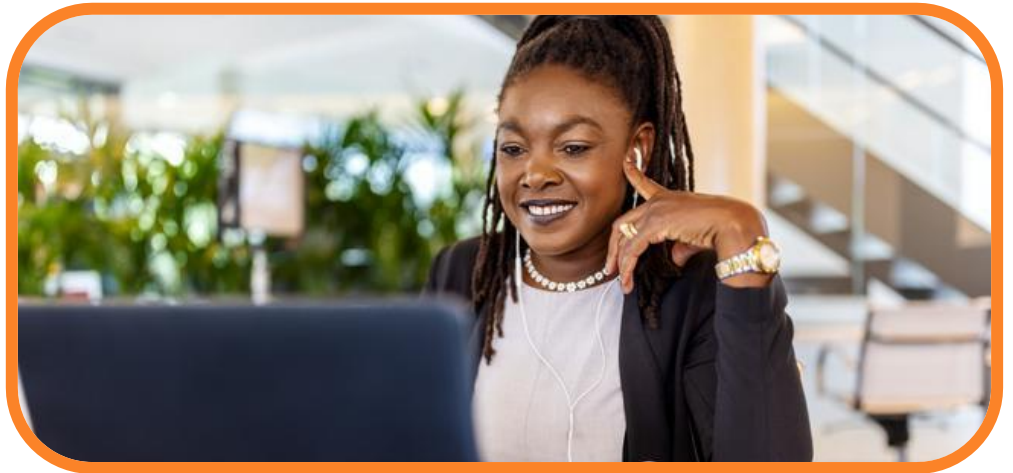
Another powerful AI-enabled use case that spans multiple agencies is the customer service chatbot. As technology improves, chatbots will take on higher-level functions beyond simply answering basic questions; they will have a deeper understanding of the citizen's needs and could provide personalized recommendations and consulting on a variety of topics from Medicare to social security.

"Agencies need a broad WAN and routes to support the growth of AI data. That should include connectivity and essential services like cloud and security, allowing for customized and efficient network solutions tailored to specific mission needs," says Ward.

Future use cases

AI is expected to unlock new opportunities and use cases we haven't even imagined. But we do know that the future will include AI systems talking to other AI systems across hybrid, edge, and multi-cloud environments. And government organizations need to have an AI-ready network in place to take advantage of these new opportunities.

"As AI drives growing demand for data and low-latency processing, Lumen has been readying our infrastructure, technology, and network," says Ward. "Lumen anticipated the surge in data and the need for faster, more scalable networks, reflected in their evolution from 1G to 400G bandwidth capabilities."



Lumen Private Connectivity FabricSM (PCF) addresses today's AI data needs without sacrificing performance or security. This fabric is a purpose-built secure network architecture tailored to the unique requirements of customers, providing the flexibility and scalability needed to meet today's and tomorrow's demands in the emerging AI economy.

Learn more at [Lumen.com/PCF](https://lumen.com/PCF).

[1EY Pulse Survey: insights into the integration of AI in government, 2024](#)

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